

## Description of a New *Platycerus* (Coleoptera, Lucanidae) from Sichuan, Southwest China, with Records of Two Other Species Belonging of the Same Genus

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**Abstract** A new species of the genus *Platycerus* belonging to the group of *P. bashanicus* is described from Hongba Nature Reserve of central Sichuan, Southwest China, under the name *P. diluvialis*. Two other species of the same genus, *P. consimilis* and *P. turnai* are newly recorded from Jiuzhaigou of northern Sichuan.

In this paper, I am going to describe a new species of the genus *Platycerus* belonging to the group of *P. bashanicus* from the Hongba Nature Reserve of central Sichuan under the name of *P. diluvialis*. In addition, two other species of the same genus, *P. consimilis* and *P. turnai* will be recorded from Jiuzhaigou of northern Sichuan. All the specimens examined in this study were collected through my field researches routinely made in recent years in collaboration with the Academia Sinica. Terms and abbreviations for the genital organ employed herein are the same as those proposed in my previous paper (IMURA, 2010 a).

I wish to express my sincere thanks to Mr. FAN Ting (International Academic Exchange Center of the Academia Sinica, Chengdu) for his kind aid through my field work. Thanks are also due to Dr. Shun-Ichi UÉNO (National Museum of Nature and Science, Tokyo) for revising the manuscript of this paper.

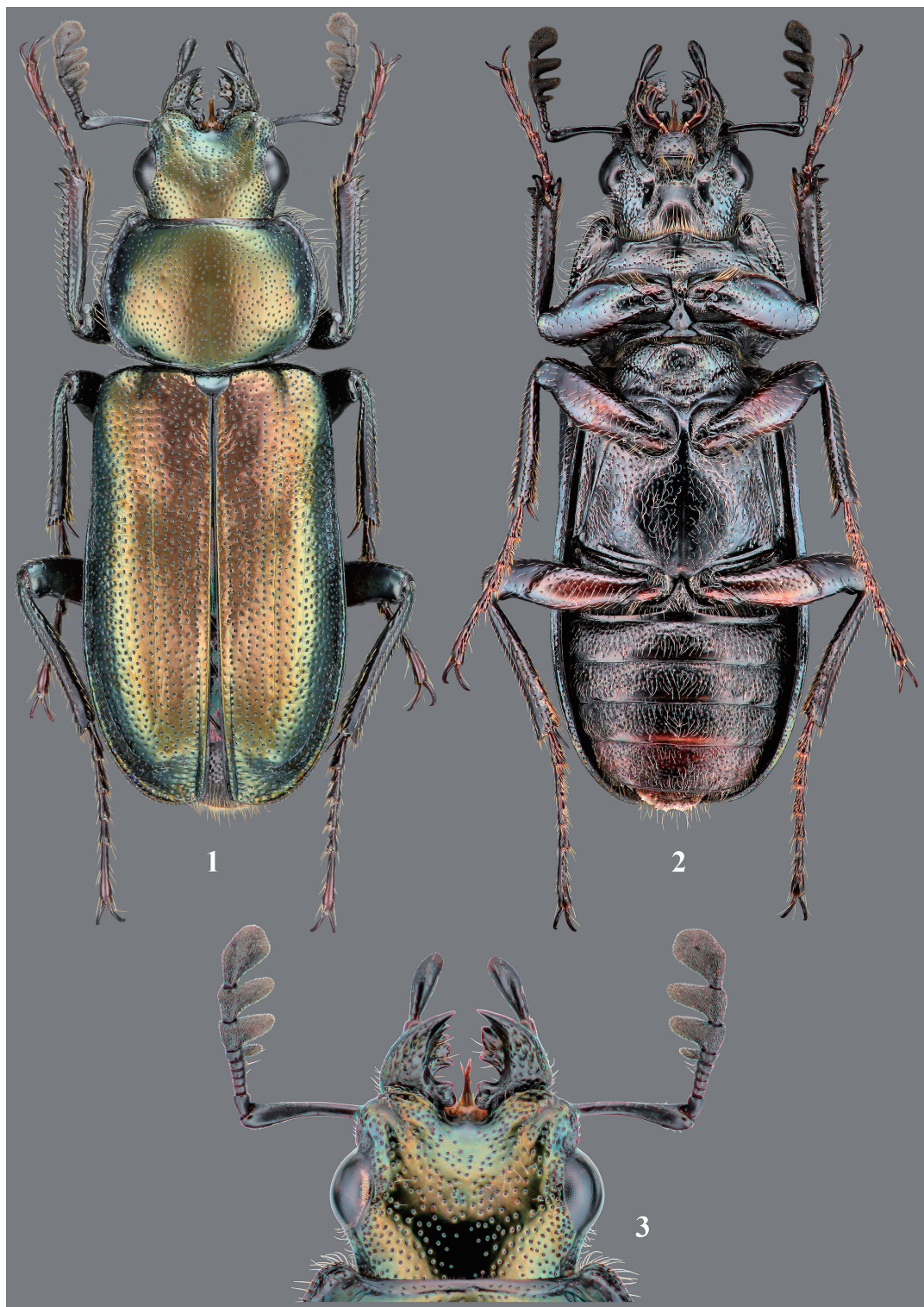
### 1. *Platycerus diluvialis* IMURA, sp. nov.

(Figs. 1–17)

**Male.** Length (including mandibles): 10.4–10.6 mm. Body above coppery brown with a weak greenish tinge; venter brownish black with a faint blue-greenish metallic lustre; extremities blackish, though palpi, tarsi, claws and femora are partly reddish brown. Colour variation is hardly recognizable so far as the two type specimens are concerned.

Externally similar to all the six known species of the group of *P. bashanicus*, above all to *P. xiongmao* described from Baoxing Xian of central Sichuan, but differs from that species in the following points: 1) head a little more hypertrophic, with eyes apparently larger; 2) pronotum a little more transverse, with the disc less strongly convex above; 3) median portion of elytra less strongly wrinkled.

Genitalia (measured from basal tip of basal piece to apical end of paramere) about four-ninths as long as elytra. Basal piece as in other members of the same species group. Paramere similar to that of *P. xiongmao*, but slenderer in lateral view, with the apico-dorsal angle more strongly protruded posteriorly and more sharply pointed at the tip. Apical plates of penis symmetrical, almost as those of *P. xiongmao*, though hardly wrinkled near apical tips, with visor-like protrusions shorter and robuster. Internal sac also similar to that of *P. xiongmao*, but differs from that species in details as follows: 1) BML larger and robuster; 2) 1PFL much robuster, above all in basal portion; 3) 3PFL apparently nar-



rower in dorsal view than that of *P. xiongmao*, with the distal tip more sharply pointed; 4) AL shorter and robuster.

All the seven species belonging to the group of *P. bashanicus* including the present new taxon are distinguished from one another by the following key.

**Key to the Species of Chinese *Platycerus* belonging to the group of *P. bashanicus* (male)**

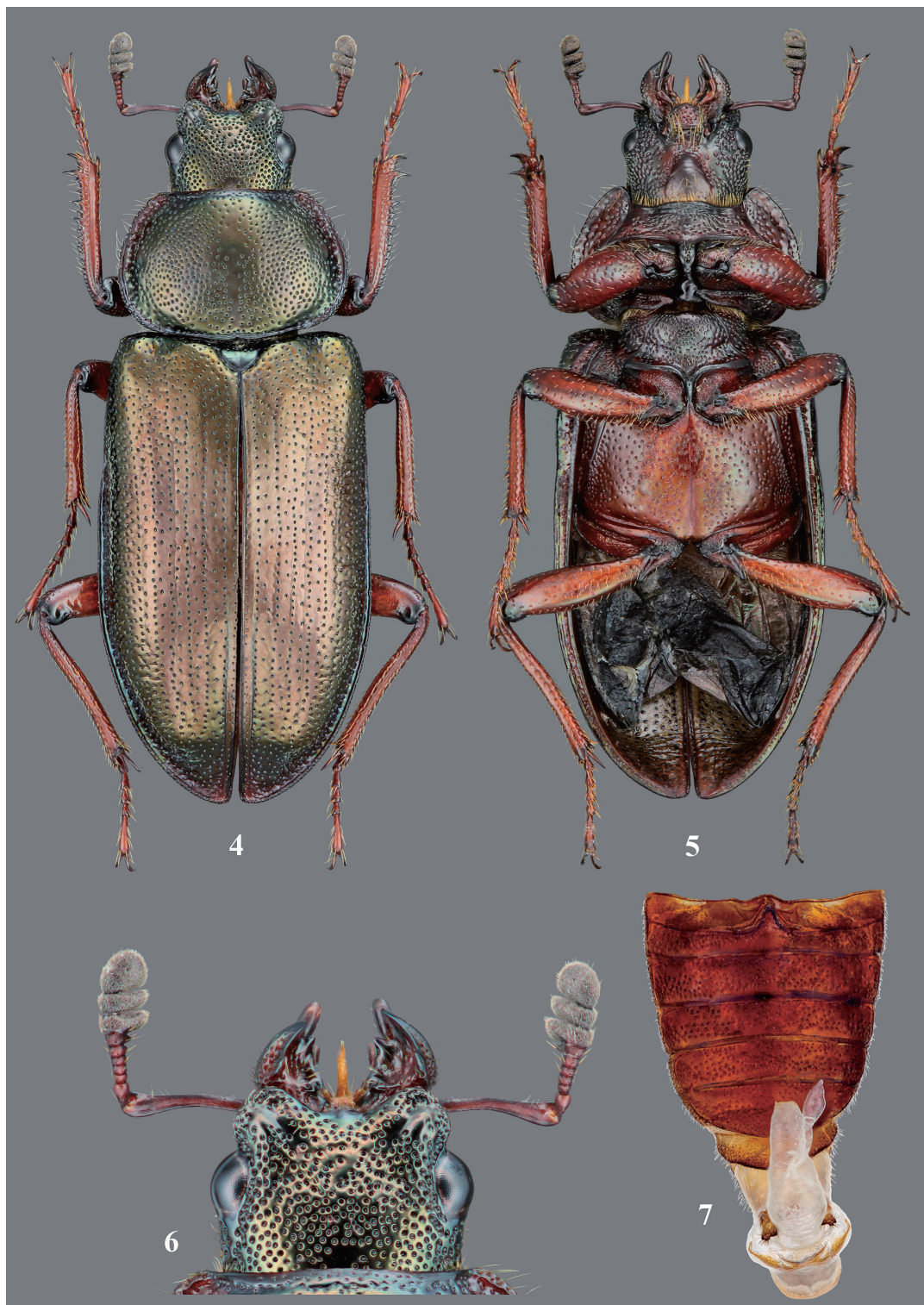
1. Internal sac with 2 pairs of PFL; W. Henan (Baotianman). ..... *P. canae* IMURA, 2010
- Internal sac with 3 pairs of PFL. .... 2
2. 3PFL much larger than 1PFL or 2PFL; BML well developed. .... 3
- 3PFL almost as large as, or smaller than 1PFL or 2PFL; BML very small or vestigial ..... 4
3. BML strikingly developed, much longer than flagellum; body above variable in coloration, dark blue, greenish blue, bluish green or greenish coppery; NC. & NE. Sichuan. ....
- ..... *P. consimilis* TANIKADO et TABANA, 1998
- BML moderately developed, shorter than flagellum; body above coppery brown without color variation; S. Shaanxi (Qinling Mts.). .... *P. nagahatai* IMURA, 2008
4. Apical plates of penis remarkably wrinkled near apical tips. .... 5
- Apical plates of penis very weakly or hardly wrinkled near apical tips. .... 6
5. Apical plates of penis robuster, less strongly elongated laterad, with visor-like protrusions shorter; internal sac with BML vestigial, AL longer, slenderer and less strongly bent inwards; N. Chongqing~S. Shaanxi (Daba Shan Mts.). .... *P. bashanicus* IMURA et TANIKADO, 1998
- Apical plates of penis slenderer, more strongly elongated laterad, with visor-like protrusions longer; internal sac with BML larger and more prominently protruded, AL shorter, robuster and more strongly bent inwards; W. Hubei (Shennongjia). .... *P. yeren* IMURA, 2008
6. Paramere robuster, with apico-dorsal angle less strongly protruded posteriad; apical plates of penis weakly wrinkled near apical tips, with visor-like protrusions longer and slenderer; internal sac with BML very small, 3PFL almost as large as 1PFL and a little larger than 2PFL, AL longer and slenderer; C. Sichuan (Baoxing Xian). .... *P. xiongmao* IMURA, 2008
7. Paramere slenderer, with apico-dorsal angle more strongly protruded posteriad; apical plates of penis hardly wrinkled near apical tips, with visor-like protrusions shorter and robuster; internal sac with BML larger, 3PFL smaller than both 1PFL and 2PFL, AL shorter and robuster; C. Sichuan (Hongba of Jiulong Xian). .... *P. diluvialis* IMURA, nov.

**F e m a l e.** Length (including mandibles): 11.5–11.6 mm. Coloration of dorsal surface similar to that of male, though reddish tinge is a little stronger and greenish tinge is weaker; venter and extremities more brownish, above all in abdominal sternites.

Head much smaller than in male; its dorsal surface coarsely scattered with large punctures partly confluent with one another; mandibles small and short, with the basic structure almost as in the other members of the same species group.

Pronotum transverse barrel-shaped, 1.48–1.49 times as wide as long, widest behind the middle, more acutely narrowed towards base than towards apex, roundly arcuate on both sides, with the lateral margins crenulate throughout and not angulate at the widest part; front angles hardly protruding anteriad, hind angles obtusely rounded; disc moderately convex above, with the surface coarsely scattered







with large punctures.

Elytra 1.67 times as long as wide in both of two specimens examined, widest a little behind the middle, almost parallel-sided before the widest part, with the lateral sides nearly straight before middle and roundly arcuate near apices; shoulders distinct, with a small humeral tooth at the tip on both sides; surface rather uniformly scattered with small punctures which are usually arranged in longitudinal rows; intervals hardly rugoso-striate near the sutural part in median portion.

Female genital organ as shown in Figs. 16 and 17; gonocoxite robust, subquadrate, not narrowed towards apex, with the lateral sides slightly sinuate, postero-lateral corners protruding posteriad on both sides.

The female of the present new species is rather unique in external and genitalic features, and readily discriminated from all other species belonging to the group of *P. bashanicus* by the following respects: 1) dorsal surface of head much more coarsely scattered with large punctures which are partly confluent with one another; 2) pronotum different in profile, not trapezoidal as in other species but transverse barrel-shaped, with the lateral sides markedly crenulate, disc more coarsely scattered with larger punctures; 3) elytra also different in profile, much more gradually narrowed towards apices; 4) gonocoxites unique in profile.

*Type series.* Holotype: ♂, Hongba Nature Reserve [洪坝自然保护区], ca. 2,000 m in altitude, near the northeastern corner of Jiulong Xian [九龙县], in Garzê-zangzu-zizhizhou [甘孜藏族自治州], central Sichuan, Southwest China, larvae collected in the field on 5–XI–2010 by Y. IMURA and emerged in the laboratory in VII–2011, to be deposited in the Zoological Institute of Academy of Sciences, St. Petersburg, Russia. Paratypes: 1 ♂, 2 ♀♀, same data as for the holotype, deposited in the collection of Y. IMURA (Yokohama).

*Notes.* Judging from uniquely featured male genital organ, this new species doubtless belongs to the group of *P. bashanicus*. Its type locality, Hongba in central Sichuan, forms the southwestern limit of the distributional range of this species group.

All the specimens examined in this study were collected as larvae from the white-rotten part of dead tree fallen down on the ground of the deciduous broad-leaved forest, and emerged in the laboratory eight months later. In my previous paper (IMURA, 2011, p. 139), I recorded several larvae of *Platycerus* from Hongba Nature Reserve and mentioned that they might belong to *P. masumotoi* (IMURA, 2011, p. 131, figs. 1–4) but the actual result was different from what I had expected. All the adults emerged in the laboratory do not belong to *P. masumotoi* but belong to the present new species. No sympatrically occurring *Platycerus* species has therefore been found from Hongba.

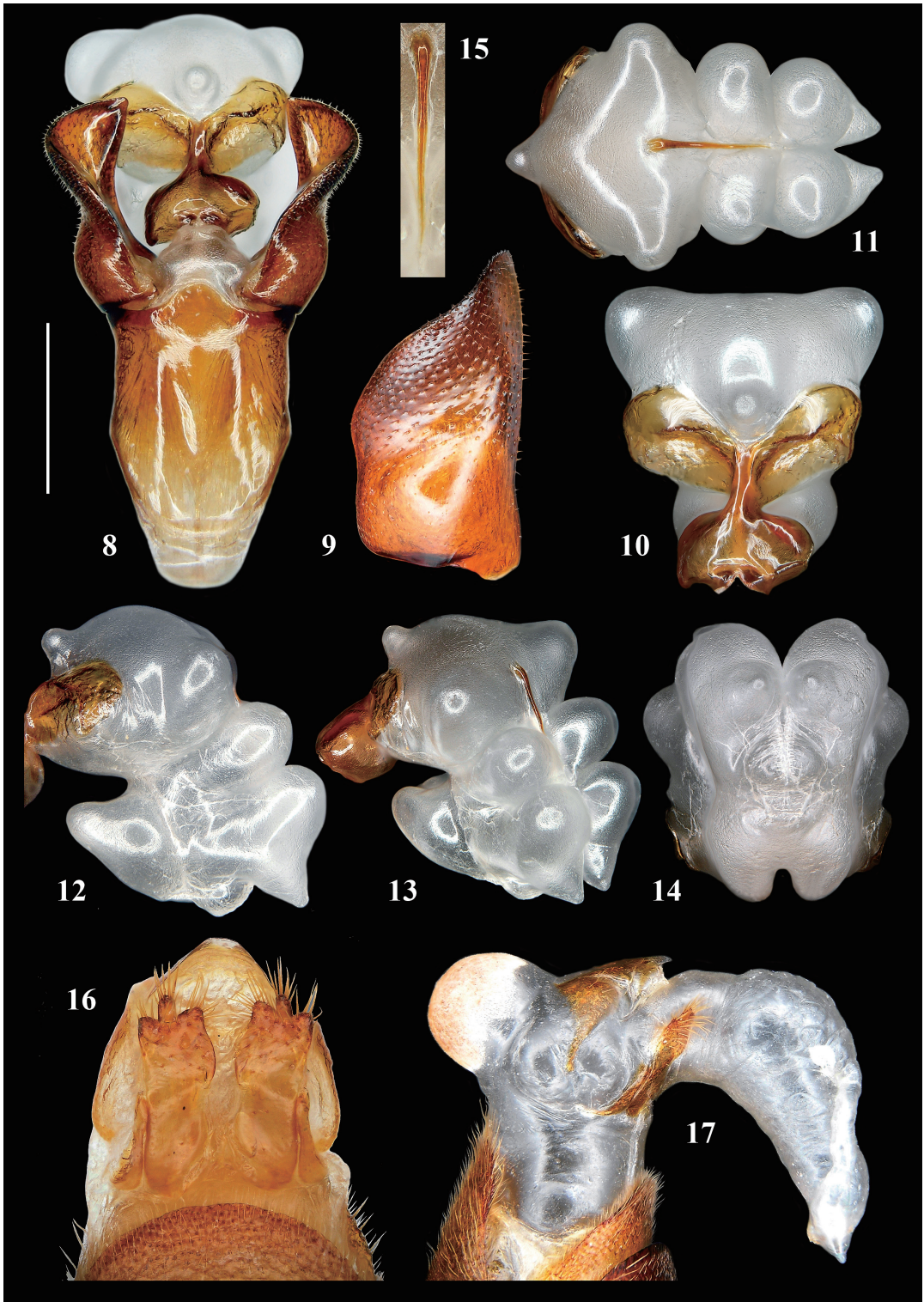
*Etymology.* The new specific name “*diluvialis*” means “occurring in the flood plains”, since the name of the type locality, Hongba, means in Chinese a large embankment built for flood control, which reminds us of a place often suffered from flood.

## 2. *Platycerus consimilis* TANIKADO et TABANA, 1998

*Platycerus consimilis* TANIKAKO et TABANA, 1998, Gekkan-Mushi, Tokyo, (333), p. 17, figs. 1 (p. 13) & 3–8 (p. 14). — IMURA, 2010 a, The genus *Platycerus* of East Asia, p. 141, figs. 1–3 (p. 138) & 5–16 (p. 145).

*Specimens examined.* 1 ♂ (9.8 mm, bluish green), 1 ♀ (9.5 mm; brassy with greenish tinge, more vividly so on head and pronotum), below Ganhaizi [干海子], ca. 2,500 m in altitude, near Jiu-

Fig. 4–7. *Platycerus diluvialis* sp. nov., ♀ (paratype) from Hongba of central Sichuan, Southwest China. — 4, Dorsal view; 5, ventral view; 6, head in magnifying view; 7, abdominal sternites and inflated genital organ in ventral view.



zhaigou [九寨沟], in Jiuzhaigou Xian [九寨沟县], of Aba-zangzu-qiangzu-zizhizhou [阿坝藏族羌族自治州], in northern Sichuan, Southwest China, 22–XI–2011, Y. IMURA leg., deposited in the collection of Y. IMURA.

*Notes.* This species was described from Miyaluo of Li Xian in north-central Sichuan. It was later recorded from another localities of Li Xian (IMURA, 2008 b, p. 294, fig. 7) and the Micang Shan Mountains of northeastern Sichuan. The Micang Shan population was described as a new subspecies under the name of *phagophilus* (IMURA, 2005, p. 260, figs. 1–3, 6). Jiuzhaigou, which is about 200 km distant to the north-northeast from Miyaluo and about 270 km distant to the west-northwest from Micang Shan, is a new locality and the northernmost record of this species. Both the two specimens from Jiuzhaigou are considerably small for the present species, but almost identical with the nominotypical race in both external and genitalic features. In Jiuzhaigou, this species inhabits, sympatrically with *P. turnai*, a primary forest composed of broad-leaved deciduous trees and certain kind of coniferous tree. Both the specimens collected in the field were hibernating in dry, white-rotten part of standing withered wood with the diameter 15 to 20 cm.

### 3. *Platycerus turnai* IMURA, 2001

*Platycerus turnai* IMURA, 2001, Gekkan-Mushi, Tokyo, (362), p. 28, figs. 1–11. — IMURA, 2010 a, The genus *Platycerus* of East Asia, p. 119, figs. 1–3 (p. 116).

*Specimens examined.* 3 ♂♂ (11.3–12.0 mm, metallic blue with a greenish tinge), 1 ♀ (9.8 mm, greenish coppery), below Ganhaizi [干海子], ca. 2,500 m in altitude, near Jiuzhaigou [九寨沟], in Jiuzhaigou Xian [九寨沟县], of Aba-zangzu-qiangzu-zizhizhou [阿坝藏族羌族自治州], in northern Sichuan, Southwest China, 22–XI–2011, Y. IMURA leg., deposited in the collection of Y. IMURA.

*Notes.* This species was originally described from Dashennongjia of western Hubei. It was later found from Wolong of central Sichuan and the Sichuan population was described as a new subspecies under the name of *P. t. sichuanus* (IMURA, 2005, p. 260, figs. 1–3, 6). All the male specimens from Jiuzhaigou are unique in having strongly bluish dorsal coloration, somewhat hypertrophic head and characteristically shaped pronotum with the front angles very sharply pointed, disc less strongly convex above bearing a pair of shallow dimples on both sides behind the middle. Male genitalia are almost identical with those of the nominotypical subspecies and *P. t. sichuanus*. It seems possible to regard the Jiuzhaigou race as a new subspecies, but I suspend judgment on the subspecific classification of *P. turnai* until I can examine ample specimens in the future. In Jiuzhaigou, this species is sympatric with *P. consimilis* as mentioned above, but the larvae prefer to feed on softly- or brown-rotten part of moistened dead tree fallen down on the ground. Both the species seem to occupy somewhat different niche in the field.

## 要 約

井村有希：中国四川省から発見されたルリクワガタ属の1新種と同属2種の記録（鞘翅目クワガタムシ

Fig. 8–17. Genital organ of *Platycerus diluvialis* sp. nov. from Hongba of central Sichuan, Southwest China. — 8–15, ♂; 8, basal piece, parameres and penis with fully inflated internal sac in ventral view; 9, right paramere in right lateral view; 10, penis with fully inflated internal sac in ventral view; 11, ditto in dorsal view; 12, ditto in right lateral view; 13, ditto in right subdorsal view; 14, ditto (apical part) in dorsal view; 15, flagellum in dorsal view. — 16–17, ♀; 16, hemisternites in ventral view; 17, genital segment with everted vagina in left lateral view. Scale: 1 mm for 8; 0.8 mm for 16.



科). —— 中国四川省からリクワガタ属の1新種を記載し、同属の他の2種を新しい産地から記録した. 1) *Platycerus diluvialis* (ホンバルリクワガタ; 新称): 四川省中部の洪坝自然保护区から発見された新種. バシヤンリクワガタ種群に属し、同省中部宝兴県の *P. xionghao* (バンドルリクワガタ) にもっとも近いが、主として雌雄交尾器形態の違いにより識別される. 2) *P. consimilis* (ミヤマルリクワガタ): 四川省中北部理県の米亚罗から記載されたバシヤンリクワガタ種群に属する種で、同省北東部の米倉山から別亜種 *P. c. phagophilus* が記載されているが、今回、同省北端の九寨沟から次種とともに発見された. 九寨沟のものは形態学的には基亜種に近いように思われる. 3) *P. turnai* (トゥルナルリクワガタ): 湖北省西部の神农架から記載された種で、1種のみでトゥルナルリクワガタ種群を構成する. 四川省中部の卧龙からは別亜種 *P. t. sichuanus* が記載されている. 今回、同省北部の九寨沟から前種とともに発見されたが、九寨沟産の個体は、とりわけ♂において背面の色調が強く青色味を帯び、頭部がやや大きく、前胸背板は前角が鋭く尖り、背面の膨隆が弱く、後方に一對の浅い窪みを有するなど、独特の形態をそなえている. 本種の亜種分類に関しては、将来より多くの研究材料が得られてから再検討することにした. 九寨沟から記録されたこれら2種は同所的に生息しているが、ミヤマルリクワガタが乾燥した立枯れの白色腐朽部分を、トゥルナルリクワガタが湿潤な接地材の軟腐朽部分を幼虫のおもな食餌資源として利用しており、それぞれが異なる生態的地位を占めていると考えられる.

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